

VOICEGATE H.323



User's Guide
rev. 2.0 07/2006

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PREFACE

All rights reserved; no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, otherwise, without the prior written permission of Digicom S.p.A. The content of this booklet may be modified without notice. Every possible care has been taken in testing and putting together all the documentation contained in this booklet, however Digicom can not take any responsibility brought by the use of this booklet.

The following installation rules should be respected in order to have the best working order of the equipment and for the user's safety.

ENVIRONMENTAL CONDITIONS

ENVIRONMENTAL TEMPERATURE from 0 to +45°C RELATIVE HUMIDITY from 20 to 80% n.c.

Rapid changes of temperature or humidity should be avoided (0,03°C/min).

This equipment, including cables, should be installed in an area free from:

- Dust, humidity, heat from direct sun light.
- Objects which irradiate heat. These could cause damage to the container or other problems.
- Objects which produce a strong electromagnetic field (loudspeakers, etc.).
- Liquids or chemical corrosive substances.

CLEANING THE TERMINAL

Use a clean and soft cloth. Wet the cloth with water or natural detergent if it is necessary to remove any stains. Never use chemical products such as petrol or solvents.

VIBRATIONS OR DROPPING

Caution against vibrations and dropping.

DECLARATION OF CONFORMITY

We, Digicom S.p.A. registered office at: via Volta 39 - 21010 Cardano al Campo (Varese - Italy) declare under our sole responsibility that the product: Name: VoiceGate H.323 satisfies the basic requirement of the below indicated Directive:

- **1999/5/CE** of March 9 1999, R&TTE as having been designed in conformity with the requirements of following Reference Standards:
 - EN 300 386
 - EN 55022
 - EN 60950-1
 - EN 41003

Disposal of out-of-date equipments



All the electrical and electronic products must be disposed as separate waste with respect to the separate municipal collection, through specific collection systems indicated by the local authorities.

A crossed garbage can on a product indicates that this equipment is subject to the 2002/96/CE (WEEE) European Directive.

In case of abusive disposal of these products, sanctions are applicable.

1. GENERAL DESCRIPTION

Dear Customer,
 Thanks for purchasing a Digicom's product.
 VoiceGATE H.323 integrates in a sole device all the functionalities and the characteristics necessary to carry out an ADSL Internet connection, giving the possibility of VoIP calls and protecting your LAN from external attacks through a built-in firewall.

Requirements

- Computer with 10/100 Mbps Ethernet cards
- TCP/IP protocol installed on each computer
- Right LAN cable, RJ45 connectors on both ends
- ADSL on analog line, RJ11 connector
- Single or multiple user ADSL subscription with an ISP
- Data concerning the subscription

Package Contents

- VoiceGATE H.323
- Power supply
- User's manual on CD-Rom
- Quick configuration Guide
- RJ45-RJ45 right cable
- RJ11-RJ11 line cable



1.1. DESCRIPTION

ADSL

- Full-rate ANSI T.1413 Issue 2
- G. dmt (ITU G.992.1)
- G.hs (ITU G.994.1)
- ADSL over ISDN/U-R2
- Speed up to 8 Mbps in download and 1 Mbps in upload
- ATM Adaptation Layer Type 5 (AAL5)
- Multiple Protocol over AAL5 (RFC 2684, formerly RFC 1483)
- Bridge or routed Ethernet encapsulation
- VC and LLC multiplexing
- PPP over Ethernet (PPPoE)
- PPP over ATM (RFC 2364)
- Classical IP over ATM (RFC 1577)
- OAM F4/F5

VOIP

- H.323 protocol support ver. 4
- Codec G.711 A-law support (64 Kbps) G.711 u-law (64 Kbps) and G.729 (8 Kbps)
- Call waiting and call transfer support
- Silence suppression support, voice activity detection (VAD), comfort noise generation (CNG), caller ID, adaptative jitter buffer

LAN

- 4 LAN ports 10/100 Mbps
- MDI/MDI-X function
- DHCP Server
- NAT
- Static routing
- RIP 1/2
- DDNS support (Dynamic Domain Name Server)
- Virtual Server
- DMZ
- SNTP
- DNS

FIREWALL

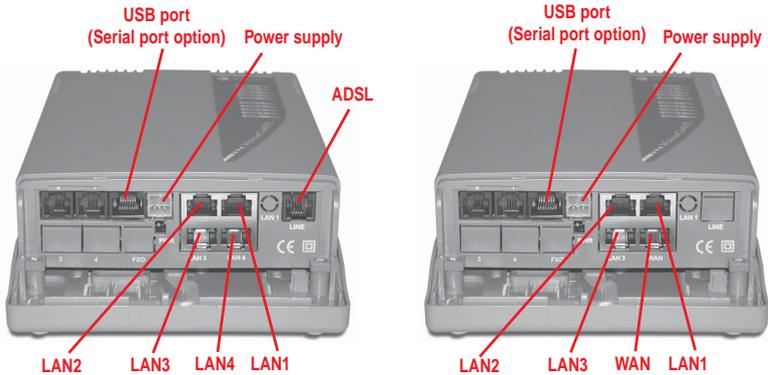
- DoS attacks protection and IP Spoofing, Land Attack, Ping of Death, TCP Syn Flooding, etc.
- Packet Filtering (Port, Source IP, Destination IP, MAC address)

1.2. PORTS AND LEDS DESCRIPTION**LED**

PWR	ON	VoiceGATE H.323 powered
Line	ON	Telephone line configurated and registered
	Blinking	Telephone line has been engaged
LAN	ON	LAN connection enabled
	Blinking	Data activity on the LAN port
		Green or orange led for the MDI and MDI-X functionality
ADSL	ON	ADSL connection established
	Blinking	ADSL connection disabled

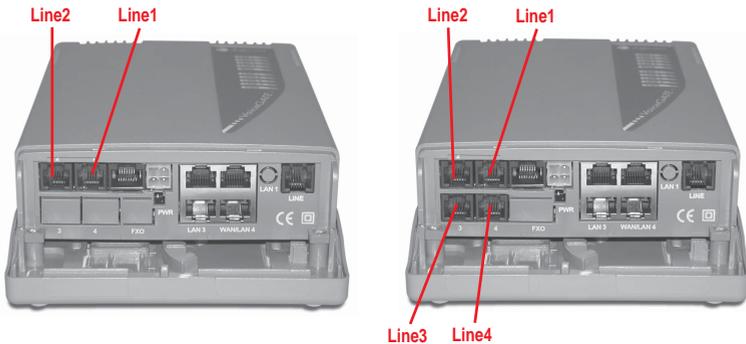
NOTE: Over the leds there is a hole to enable the reset button (factory settings recovery).

1.3. DESCRIPTION OF DATA AND POWER CONNECTORS

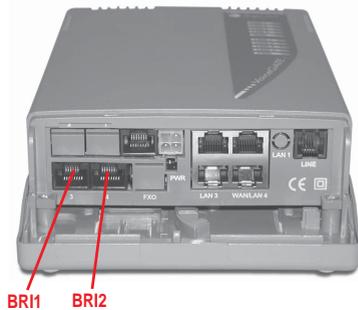


- ADSL: RJ11 connector for ADSL line
- WAN/LAN4: 10/100 Mbps Ethernet port (Ethernet version only)
- LAN1-3: 10/100 Mbps port (MDI-X)
- Porta USB: USB port for connection of computer with no Ethernet cards

1.4. PHONE INTERFACES



- Line1-4: RJ11 connectors (FXS) for PSTN analog device
- BRI: RJ45 connectors (FXS) for ISDN phone



2. INSTALLATION

2.1. POWER SUPPLY

Power the VoiceGATE H.323 using the power supply you find into the package.

2.2. ADSL CONNECTION

Connect the ADSL line to the LINE connector.

2.3. LAN CONNECTION

Connect the computers directly to the VoiceGATE on the LAN ports, or if you have an existing LAN, connect the VoiceGATE H.323 to a LAN Hub or Switch port through an RJ45-RJ45 cable.

2.4. COMPUTER CONFIGURATION

To access the VoiceGATE H.323 configuration you computer must be equipped with the TCP/IP protocol and a common browser (Explorer, Firefox, Netscape...).

VoiceGATE H.323 default settings are the following:

IP address:	192.168.30.1	User Name	Password
Subnet Mask:	255.255.255.0	Administrator level	admin
DHCP Server:	Enabled	User level*	user
			voicegate

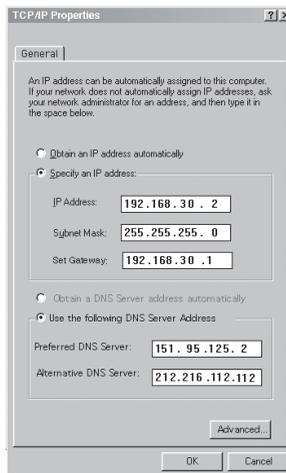
*Entering as user you can only display the VoiceGATE H.323 configuration but not modify it.

To enter the configuration menu you must set on the computer an IP address of the same LAN of VoiceGATE H.323; you can set the address statically or using the assignment through the DHCP Server.

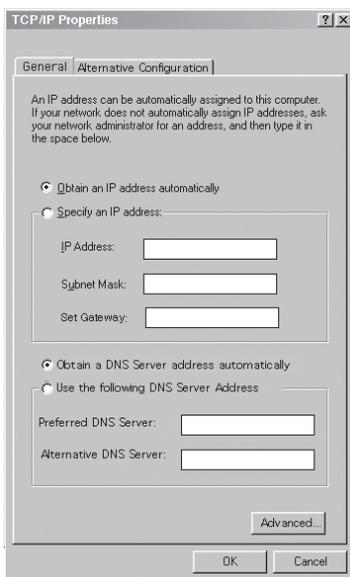
Windows® XP

From the Start menu select -> Control Panel -> Network connections.

Select **LAN Connection**, display the Properties, select Internet Protocol (TCP/IP) and press on Properties button.



If using a static IP Address insert 192.168.30.x (with x between 2 and 253), Subnet Mask 255.255.255.0 and gateway 192.168.30.1



If using a DHCP Server, set "Obtain automatically an IP Address".

2.5. VOICEGATE H.323 CONFIGURATION

Configuration Main Guidelines:

1. The PC used for the VoiceGATE H.323 configuration must not have a proxy software or firewall. If using proxy applications, firewall or similar, it is necessary to disable them temporarily to go on with the VoiceGATE H.323 configuration.
2. In each configuration window press Submit to confirm the new parameters.

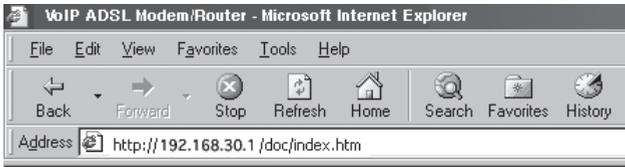
Submit Changes

3. To save and enable the new settings press Save & Reboot in the Save Settings / Reboot menu.

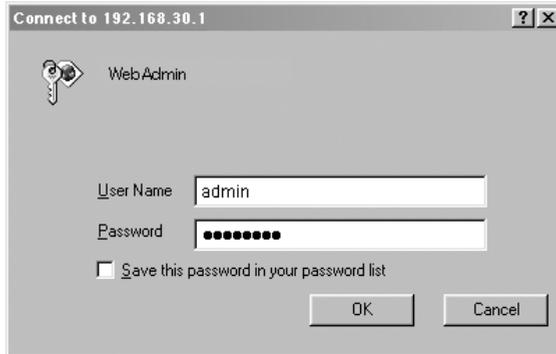
Save & Reboot

Accesso alla configurazione del VoiceGATE H.323

Open your Browser and be sure it isn't set for a proxy.
Digit the following URL <http://192.168.30.1>



You will be asked to authenticate to enter the VoiceGATE H.323 configuration:



Insert user name "admin" and password "voicegate".

For security reason we advise to modify the password once the configuration is over.

3. CONFIGURATION MENU VOICEGATE ADSL

To configure the VoiceGATE H.323 you need all the information on your ADSL subscription. These data must be given by the Internet Provider supplying the ADSL Internet access.

Usually these are the parameters:

- VPI / VCI (generally 8 / 35)
- Protocol type (PPP over ATM, PPP over Ethernet, RFC 1483.....)
- DNS IP Addresses used by the Provider
- Username and Password or assigned IP addresses.

3.1. CONFIGURATION MENU

The configuration page divides into 3 main menu: **Status**, **Configuration** and **Admin Privilege**.

3.1.1. STATUS

It is possible to verify some information on the VoiceGATE H.323 through the menu: Home, PPP and ADSL. In the Admin Privilege menu you can display the WAN, ATM and TCP status.

3.1.2. CONFIGURATION

In the Configuration menu you can enter the configuration menu both for the Ethernet and VoIP functionalities.

3.1.2.1 WAN Configuration

The WAN configuration page allows the user to configure the ADSL subscription.

Select Adapter:

Adapter: ▼

Press Submit in the Select Adapter window. The default Pvc is Pvc0. In case your ADSL subscription can manage multiple PVC you can choose which one configure/display.

<table style="width: 100%;"> <tr> <td>Virtual Circuit</td> <td><input type="text" value="Enabled"/> ▼</td> </tr> <tr> <td>Bridge</td> <td><input type="text" value="Disabled"/> ▼</td> </tr> <tr> <td>IGMP</td> <td><input type="text" value="Disabled"/> ▼</td> </tr> <tr> <td>Encapsulation</td> <td><input type="text" value="1483 Routed IP LLC"/> ▼</td> </tr> <tr> <td colspan="2">ATM</td> </tr> <tr> <td>VPI</td> <td><input type="text" value="8"/></td> </tr> <tr> <td>VCI</td> <td><input type="text" value="35"/></td> </tr> <tr> <td>Service Category</td> <td><input type="text" value="UBR"/> ▼</td> </tr> <tr> <td>Peak Cell Rate</td> <td><input type="text" value="0"/> kbps</td> </tr> <tr> <td>Sustainable Cell Rate</td> <td><input type="text" value="0"/> kbps</td> </tr> <tr> <td>Max Burst Size</td> <td><input type="text" value="0"/></td> </tr> </table>	Virtual Circuit	<input type="text" value="Enabled"/> ▼	Bridge	<input type="text" value="Disabled"/> ▼	IGMP	<input type="text" value="Disabled"/> ▼	Encapsulation	<input type="text" value="1483 Routed IP LLC"/> ▼	ATM		VPI	<input type="text" value="8"/>	VCI	<input type="text" value="35"/>	Service Category	<input type="text" value="UBR"/> ▼	Peak Cell Rate	<input type="text" value="0"/> kbps	Sustainable Cell Rate	<input type="text" value="0"/> kbps	Max Burst Size	<input type="text" value="0"/>	<table style="width: 100%;"> <tr> <td colspan="2">Static IP Settings</td> </tr> <tr> <td>IP Address</td> <td><input type="text" value="192.168.241.101"/></td> </tr> <tr> <td>Subnet Mask</td> <td><input type="text" value="255.255.255.0"/></td> </tr> <tr> <td>Gateway</td> <td><input type="text"/></td> </tr> <tr> <td colspan="2">PPP</td> </tr> <tr> <td colspan="2">Advanced PPP configuration</td> </tr> <tr> <td>Service Name</td> <td><input type="text"/></td> </tr> <tr> <td>Username</td> <td><input type="text"/></td> </tr> <tr> <td>Password</td> <td><input type="text"/></td> </tr> <tr> <td>Disconnect Timeout</td> <td><input type="text" value="0"/> minutes (Max:32767)</td> </tr> <tr> <td colspan="2">PPP Disconnect Timer Config</td> </tr> <tr> <td>MRU</td> <td><input type="text" value="1492"/></td> </tr> </table>	Static IP Settings		IP Address	<input type="text" value="192.168.241.101"/>	Subnet Mask	<input type="text" value="255.255.255.0"/>	Gateway	<input type="text"/>	PPP		Advanced PPP configuration		Service Name	<input type="text"/>	Username	<input type="text"/>	Password	<input type="text"/>	Disconnect Timeout	<input type="text" value="0"/> minutes (Max:32767)	PPP Disconnect Timer Config		MRU	<input type="text" value="1492"/>
Virtual Circuit	<input type="text" value="Enabled"/> ▼																																														
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PPP Disconnect Timer Config																																															
MRU	<input type="text" value="1492"/>																																														

The values to insert depend on the type of subscription and on the configured line.

- **PPPoA / PPPoE line**

The lines with dynamic IP address use PPPoA or PPPoE protocols (PPPoE on request). With this kind of lines you must authenticate with user name and password.

Virtual Circuit Section

Set Bridge at Disabled and select the protocol in Encapsulation (PPPoA VC-Mux or PPPoE LLC)

ATM Section

Insert VPI and VCI, if not differently indicated in the activation agreement of the ADSL line, set them at 8 and 35.

Static IP Setting

No address is necessary; these subscriptions have dynamic IP that will be assigned by the Provider at the connection.

PPP Section

Insert Username and Password supplied by the Provider for the ADSL connection.

Note: The Dynamic NAPT (default value) must be enabled in Configuration - NAT to allow the browsing of the LAN computers.

- **RFC 1483 Routed line with 1 static IP address**

The lines with static IP address generally use the RFC 1483 Routed with LLC encapsulation.

Virtual Circuit Section

Set Bridge at Disabled and select the protocol in Encapsulation (1483 Routed IP LLC)

ATM Section

Insert VPI and VCI, if not differently indicated in the activation agreement of the ADSL line, set them at 8 and 35.

Static IP Setting

Insert IP Address, Subnet and Gateway assigned by the provider.

PPP Section

No data for this section

Note: The Dynamic NAPT (default value) must be enabled in Configuration - NAT to allow the LAN computers to browse.

- **RFC 1483 Routed line with more static IP addresses**

Same configuration as the RFC 1483 Routed line with 1 static IP.

To use the assigned public IP addresses you must disable the NAT (Configuration -> NAT) and configure the first free IP address in the range on the VoiceGATE H.323 LAN interface.

All the computers operating with public IP addresses must be configured as follows:

IP: one of the assigned public IP

Subnet Mask: the Subnet associated to your public addresses

Gateway: the public address assigned to the VoiceGATE H.323 (on the LAN)

DNS: the DNS addresses supplied by the Provider

3.1.2.2. LAN Configuration

The LAN configuration page allows the user to set the configuration for the LAN connection.

LAN Configuration	
IP Address	<input style="width: 60%;" type="text" value="192.168.30.1"/>
Subnet Mask	<input style="width: 60%;" type="text" value="255.255.255.0"/>
DHCP Server <input type="button" value="Enabled"/> ▾	
DHCP address pool selection	<input type="button" value="System Allocated"/> ▾
User Defined Start Address	<input style="width: 60%;" type="text" value="192.168.30.4"/>
User Defined End Address	<input style="width: 60%;" type="text" value="192.168.30.15"/>
DHCP Gateway Selection	<input type="button" value="Automatic"/> ▾
User Defined Gateway Address	<input style="width: 60%;" type="text"/>
Lease Time	<input style="width: 20px;" type="text" value="1"/> days <input style="width: 20px;" type="text" value="0"/> hours <input style="width: 20px;" type="text" value="0"/> minutes <input style="width: 20px;" type="text" value="0"/> seconds
DHCP Relay <input type="button" value="Disabled"/> ▾	
DHCP Relay Target IP	<input style="width: 60%;" type="text" value="0.0.0.0"/>
User Mode <input type="button" value="Multi-User"/> ▾	

The default LAN IP address is 192.168.30.1; user can change it to the most appropriate address for your LAN. The computer must have addresses of the same subnet and their gateway will be the LAN IP address set in this menu.

In this menu you can also set the parameters for the DHCP Server service. If enabled the VoiceGATE H.323 will assign the configured IP addresses to the computers requesting them. If a DHCP server is present in LAN it is possible to enable the Relay function that will forward the requests to the address indicated in DHCP Relay Target IP.

3.1.2.3. VoIP

Please refer to chapter 5.

3.1.2.4. NAT

The NAT Configuration page allows the user to set the configuration for the Network Address Translation.

NAT Configuration

NAT

Mode

Session Name	User's IP	Action
<input type="text"/>	<input type="text"/>	<input type="text" value="Add"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/>		

#	Session Name	User's IP
Number of NAT Configurations 0		

[Session Name Configuration](#)

Dynamic NAPT: It's the default setting. It provides dynamic Network Address Translation capability between LAN and multiple WAN connections, and the LAN traffic is routed to appropriate WAN connections based on IP address destination and the routing tables.

NAT (Static): The NAT option only maps single WAN IP address to the local PC IP address. It is peer-to-peer mapping. (1x1) For each WAN interface, only one local PC IP address can be associated with each WAN interface. Click the link Session Name Configuration to add the session name for WAN interface.

NAPT (Static): The NAPT option maps the single WAN IP addresses to many local PCs IP addresses. (1xN). It is the multiple-mapping mechanism. For each WAN Interface, more than one local PCs can be associated with one WAN Interface. Click the link Session Name Configuration to add the session name for WAN interface.

3.1.2.5. Virtual Server

The Virtual Server Configuration page allows the external users to access to the internal services (Web server, FTP server, E-mail server or News server). When the VoiceGATE H.323 receives a request (on the WAN interface) for a service whose port has been inserted in the virtual server configuration, the request will be automatically forwarded to the specified LAN IP address where the service is active.

Virtual Server Configuration

ID	Public Port - Start	Public Port - End	Private Port	Port Type	Host IP Address	
1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="button" value="Add This Setting"/>

Settings need to be saved to Flash and the system needs to be rebooted for changes to take effect.
The maximum number of entries above is 20. The maximum number of mapped ports is 20

For example if at 192.168.30.55 IP address an FTP service is active and it must be available also outside, you must insert the Port 21 (FTP) and associate it to 192.168.30.55 IP address. In the TCP/UDP ports paragraph you will find a list of the most used ports.

ID	Public Port - Start	Public Port - End	Private Port	Port Type	Host IP Address	
1	21	21	21	TCP	192.168.30.55	<input type="button" value="Delete This Setting"/>

3.1.2.6. Bridge Filtering

The Bridge Filtering or Mac Filtering allows to define some security rules related to the MAC address.

Bridge Filtering

Filtering Enable: Yes No

Filtering Action: Block Forward

ID	Src MAC	Dest MAC	Type	
1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

(1) MAC address format : aabbccddeeff.000000000000 indicates DON'T CARE
 (2) Ethernet type format: aabb.0000 indicates DON'T CARE
 (3) The maximum number of entries is 16



3.1.2.7. DNS

DNS Configuration

DNS Proxy

Auto Discovery

User Configuration

DNS Server

DNS Server

Url Name

Host Ip

It is necessary that each computer in LAN knows the DNS IP addresses.

If you don't use the VoiceGATE H.323 DHCP server, you must insert manually the DNS addresses in the Ethernet card properties of each PC. You have two options:

1. Insert in the DNS configuration of each PC those supplied by your provider.
2. Insert in the DNS configuration of each PC the VoiceGATE LAN IP address and insert the DNS IP addresses supplied by the provider.

In the second case each DNS query message will be sent to theVoiceGATE H.323 that thanks to the DNS Proxy feature can automatically locate the addresses.

If your subscription uses dynamic IP addresses, use the Auto Discovery option, if you have a subscription with static IP addresses, use the User Configuration option; in this case insert the DNS supplied by the provider in the "DNS Server" field and verify the "Add" option is enabled then pressSubmit.

The insertion of the DNS in this window is necessary for a correct use of the Dynamic DNS service.

3.1.2.8. *Dynamic DNS*

With the Dynamic DNS service a domain name can be moved into a dynamic IP address. This allows to access some services in LAN (web server, e-mail server or ftp server) without knowing the IP address.

Dynamic DNS Update Configuration

Dynamic DNS Enabled

DDNS Server ▼

Update Type ▼

Username

Password

Host Name 0

Host Name 1

Host Name 2

Host Name 3

Host Name 4

To use this service it is necessary to subscribe an account with a DynDNS server and insert the data received in the configuration window. In Host insert the registered domain name.

3.1.3. *ADMIN PRIVILEGE*

3.1.3.1. *ADSL Configuration*

This page allows the user to configure some ADSL settings. Modify this menu only if requested by your Provider or by the Digicom Technical Support.

3.1.3.2. *RIP Configuration*

In this page the user can enable/disable the RIP routing protocol (default=disabled).

3.1.3.3. *Route Table*

The Route Table page allows the user to define some static routing showing, for a specific Destination, the gateway or the PVC to be used.

3.1.3.4. *Misc Configuration*

This page allows the user to set all the Miscellaneous configurations, the configuration access mode and the DMZ option. A DMZ (De-Militarized Zone) is added between a protected network and an external network in order to provide an additional layer of security. When there is a suspected packet coming from WAN, the firewall will forward this packet to the DMZ host.

3.1.3.5. *Diagnostic Test*

It is a useful instruments to verify the Internet connection, in case of problems it gives information to identify the fault.

3.1.4. FIREWALL

This allows the user to configure various firewall options. Pay attention this requires a attenzione che questo comporta una 5% loss of performances.

Configuration | Firewall

VoiceGate Firewall Version: 3.2.9

VoiceGate firewall allows users to configure various databases/firewall options and Inbound/Outbound policies for controlling Inbound/Outbound traffic.

Advanced Options:
 The following **firewall options** are configurable for advanced firewall feature:

- [Protection Policy](#)
- [Hacker Log](#)
- [Service Filtering](#)

Firewall Databases:
 The following **databases** are configurable for setting inbound/outbound policies:

- [IP Group](#)
- [Service Group](#)
- [Time Window](#)

Inbound/Outbound Policies:
 The following **policies** are configurable for controlling traffic:

- [Inbound Policy](#)
- [Outbound Policy](#)

Firewall Enabled ▼

3.1.4.1 Advanced Option

Protection Policy

This page allows the user to define from which DOS attacks you want to protect your LAN.

Configuration | Firewall | Protection Policy

The Advanced firewall attacks can be configured based on your specific need.

Basic Protection:

- IP Spoofing checking
- Ping of Death checking
- Land Attack checking
- Ressambly Attack checking

Advanced Protection:

- SYN Flooding checking
- ICMP Redirection checking
- Source Routing checking
- Winnuke Attack checking

Hacker Log

It allows to define which events must be indicated in the LOG file.

Configuration | Firewall | Hacker Log

Alert Log:

SYN Flooding
 Ping of Death
 IP Spoofing
 Win Nuke

General Log:

General Attacks
 Deny Policies
 Allow Policies

Log Database Properties:

- Log Frequency Every records/event.

Service Filtering

It allows to block from outside the access to some services.

Configuration | Firewall | Service Filtering

The following services can be configured based on your specific need.

Ping from External Network
 Telnet from External Network
 FTP from External Network
 DNS from External Network
 IKE from External Network
 RIP from External Network
 DHCP from External Network

3.1.4.2. Firewall Databases (IP Group Service Group Time Window)

It allows the creation of groups based on IP, Service or time bands and then associate to them the firewall rules.

Configuration | Firewall | IP Group

No Entries in IP Group Database

IP Entry Name	IP addr. 1	IP addr. 2	IP/Mask
<input type="text"/>	<input type="text"/>	<input type="text"/>	Single IP <input type="button" value="Add/Modify this entry"/>

Configuration | Firewall | Service Group

No Entries in Service Group Database

Service Entry Name	TCP/UDP	Port #
<input type="text"/>	TCP <input type="button" value="Add/Modify this entry"/>	<input type="text"/>



Configuration | Firewall | Time Group

No Entries in Time Window Database

Time Window Name	Time Period	
	from Monday, 01 : 00 AM to Monday, 01 : 00 AM	<input type="button" value="Add/Modify this entry"/>

3.1.4.3. Inbound/Outbound Policies (Inbound Policy Outbound Policy)

This page allows the user to define some rules according to the IP address and to the port number. The device will check the rules one by one, starting from the first, and if one of these is satisfied the defined action is enabled (Filtering Action).

Inbound Policy

No Entries in Inbound Policy Database

Inbound Policy

No Entries in Inbound Policy Database

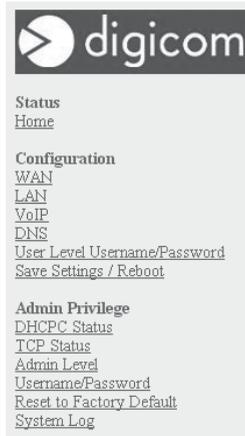
... Adding New Policy ...

Src IP: <input type="text"/> ~ <input type="text"/> Any IP	DB: None
Dest IP: <input type="text"/> ~ <input type="text"/> Any IP	DB: None
Src Port: <input type="text"/> ~ <input type="text"/> Any Port	
Dest Port: <input type="text"/> ~ <input type="text"/> Any Port	DB: None
Transport Protocol: All Protocol	
Filtering Action: Allow	
Time Window Filtering: None	

4. CONFIGURATION MENU VOICEGATE ETHERNET

4

The WAN Ethernet version has a smaller number of parameters to configure as you can see in the main menu.



4.1. CONFIGURATION

Here the user can enter the configuration menu both for the ethernet and VoIP features.

4.1.1. CONFIGURATION – WAN

WAN Configuration (Ethernet 1)

Bridge	<input type="text" value="Enabled"/>
IGMP	<input type="text" value="Disabled"/>
Static IP Settings	
IP Address	<input type="text" value="192.168.30.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text"/>
DHCP Client	
DHCP Client	<input type="text" value="Disabled"/>
Host Name	<input type="text"/>
MAC Spoofing	
MAC Spoofing	<input type="text" value="Disabled"/>
Mac Address	<input type="text" value="00:00:00:00:00:00"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

The WAN configuration menu is very simple as the parameters for the ADSL configuration are missing. Just insert the **IP Address**, **Subnet Mask** e **Gateway** to be used for the WAN interface..

Attention: The same parameters here used must be inserted also in the LAN configuration.

4.1.2. CONFIGURATION – LAN

LAN Configuration	
IP Address	<input type="text" value="192.168.30.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
<hr/>	
DHCP Server	<input type="text" value="Disabled"/> ▾
DHCP address pool selection	<input type="text" value="User Defined"/> ▾
User Defined Start Address	<input type="text" value="192.168.30.4"/>
User Defined End Address	<input type="text" value="192.168.30.15"/>
DHCP Gateway Selection	<input type="text" value="Automatic"/> ▾
User Defined Gateway Address	<input type="text"/>
Lease Time	<input type="text" value="1"/> days <input type="text" value="0"/> hours <input type="text" value="0"/> minutes <input type="text" value="0"/> seconds

The configuration page of this menu is the same as the one on the user's manual for the ADSL version. Be careful when **inserting IP Address and Subnet Mask**. The values must be the same used for the configuration of the WAN part.

4.1.3. VOIP

For the VoIP menu please refer to chapter 5.

4.1.4. DNS

DNS Configuration

DNS Proxy

Auto Discovery

User Configuration

DNS Server

DNS Server

Url Name

Host Ip

It is necessary that each computer in LAN knows the DNS IP addresses.

If you don't use the VoiceGATE H.323 DHCP server, you must insert the DNS addresses manually in the Ethernet card properties of each PC. You have two options:

1. Insert in the DNS configuration of each PC those supplied by your provider.
2. Insert in the DNS configuration of each PC the VoiceGATE LAN IP address and insert the DNS IP addresses supplied by the provider.

In the second case each DNS query message will be sent to theVoiceGATE H.323 that thanks to the DNS Proxy feature can automatically locate the addresses.

If your subscription uses dynamic IP addresses, use the Auto Discovery option, if you have a subscription with static IP addresses, use the User Configuration option; in this case insert the DNS supplied by the provider in the "DNS Server" field and verify the "Add" option is enabled then pressSubmit.

The insertion of the DNS in this window is necessary for a correct use of the Dynamic DNS service.

5. VOIP

5.1. TELEPHONY

It allows the configuration and the reading of the parameters concerning the telephones lines. Besides the telephone numbers you can also configure some options like Clir, Clip, Modem/Fax, T.38, DiB, DoB, Bcap and Codec.

Telephony & Service Configuration

Telephone Number	Clir	Clip	T.38	Modem/Fax	Dib	DoB
<input type="text"/>	<input type="checkbox"/>					
		BCap		Codec		Index
		Speech		Automatic		Modify

#	Telephone Number	Pots Line 1	Pots Line 2	Codec	Clir	Clip	T.38	Modem/Fax	Dib	DoB	Bcap
1	123	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Automatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Speech
2	456	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Automatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Speech

Change the settings

To modify the telephone number, go on as follows:

- insert the new number in the field **Telephone Number** (i.e. 870);
- activate the options you want to enable (i.e. Clip, T.38,);
- in the **Index** field indicate to which line you want to associate the new settings (for example insert 1 for the line 1);
- in the **Action** field select Modify;
- press **Submit**
- press **Save & Reboot** in the page Save setting/.../... to enable the modifications.

To modify the other lines, repeat the above mentioned procedure.

Voice Options	Description
Clir	It enables the mask of the telephone number, so the connected telephone does not send its own number to the remote one.
Clip	It enables the display of the caller's telephone number on the display of the telephone connected to the VoiceGATE.
Modem/Fax	It enables the transmission/reception of faxes and the modem is in passthrough. For this option the G.711 codec only must be used.
T.38	It enables the transmission/reception of faxes in T.38 mode.
Dib	It enables the transmission of DTMF and HOOK-FLASH inside the vocal band.
DoB	It enables the transmission of DTMF/flash out band. The tones are sent inside the H.245 or H.225 protocols.
Bcap	It allows to define the kind of call: Speech (default) or 3.1 KHz .
Codec	It is possible to define the specific codec to be used for each line. By selecting Automatic all the codecs are enabled with the possibility to set the priority in the H.323 menu. Note: The selected codec is valid for the outgoing calls only.

5.2. ISDN

[Go to Isdn Configuration](#)

On the VoiceGATEs with ISDN interface, you will be able to set the specific ISDN configuration parameters selecting "Go to Isdn Configuration".

Isdn Configuration

Isdn :	Enable ▾
Tei :	Automatic ▾
Tei Value :	0
Isdn Bus :	Short Passive ▾
Isdn hook flash key	255
Isdn layer 1 deactivation enable	<input type="checkbox"/>
Isdn type of number	National Isdn ▾

[Go back to Telephony Configuration](#)

- Tei:** TEI setting (Automatic or Fixed). To be selected according to the setting of the used switchboard/telephone.
- Tei Value:** This parameter must be inserted in case of fixed TEI only.
- Isdn Bus:** Defines the ISDN Bus type: Short Passive(up to 150 meters) or Extende Passive.
- Isdn hook flash key:** This function express the decimal value of the digit or character to be sent like '!'. In case you operate with DoB enabled. For example: 255=disabled; 48=0, 49=1, ...,57=9.
- Isdn layer 1deactivation enable:** This function allows to pull down the level 1 ISDN 15" after the call is over.
- Isdn type of number:** This function allows to select the kind of numbering to build the Called Party Number.

Automatic search on more lines

It is possible to enable the automatic search by properly setting the telephone lines. In this way the incoming calls to a same number (in the example 111) will be routed cyclically on the lines associated with the same number (in this case on all the 4 lines).

It means that for each incoming call to the same number it will ring the telephone on the line next to the one used.

For example:

1. a call from remote comes to the number 111 and the telephone connected to the line 1 rings;
2. once the conversation is over the telephone on the line 1 hangs up;
3. a new call to 111 comes; now the telephone on the line 2 rings even if the line 1 is free.
4. the next two calls will arrive on the lines 3 and 4, independently on the status of the lines 1 and 2.

Configuration examples:

1 number set for the 4 lines

#	Telephone Number	Line 1	Line 2	Line 3	Line 4
1	111	X	X	X	X
2					
3					
4					

In this case the calls coming to the number 111 will be cyclically routed on the four available lines.

2 numbers set for the 4 lines

#	Telephone Number	Line 1	Line 2	Line 3	Line 4
1	111	X	X		
2	222			X	X
3					
4					

In this case the calls coming to the number 111 will be cyclically routed to the lines 1 and 2, while the calls coming to the number 222 will be cyclically routed to the lines 3 and 4.

Assign a number to each line

#	Telephone Number	Line 1	Line 2	Line 3	Line 4
1	111	X			
2	222		X		
3	333			X	
4	444				X

In this case the calls coming to the number 111, 222, 333 and 444 will be routed each one to the correspondent line.

Direct extension for ISDN (use the "Mask" function)

#	Telephone Number	Mask	Isdn Line				Codec	Clr	Clip	Fax	T.38	Mdm	Dib	Dob	BCap
			1	2	3	4									
1	111	111	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Automatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Speech
2	222	222	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Automatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Speech
3	333	333	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Automatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Speech
4	444	444	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Automatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Speech

The VoiceGATE with ISDN interface can manage the direct extension thanks to the "Mask" function.

This function is essential when connecting VoiceGATE to a switchboard instead of the common NT sockets (it isn't possible to connect the VoiceGATE extension side). To manage the direct extension VoiceGATE must be able to receive calls directed to groups of telephone numbers (for example all the extensions of a switchboard).

1. Insert 100 in the 'Telephone Number' field;
2. Insert 1** in the 'Mask' field;
3. Assign this number and this mask to the desired lines.

With this configuration VoiceGATE will accept incoming calls addressed to its IP with number from 100 to 199. If operating with Gatekeeper, the mask development up to 100 numbers depends on the Gatekeeper itself and not on the VoiceGATE. If working with Address Book, the mask development depends totally on VoiceGATE.

2 numbers registered for 4 lines

#	Telephone Number	Mask	Line 1	Line 2	Line 3	Line 4
1	100	1**	X	X		
2	200	2**			X	X
3						
4						

All the calls arriving at a number between 100 and 199 will be cyclically routed to the lines 1 and 2, while the calls arriving to a number between 200 and 299 will be cyclically routed to the lines 3 and 4.

5.3. H.323

H.323 Configuration	
Call Setting :	Gatekeeper <input type="button" value="v"/>
Codec Selected:	G.723.1 <input type="text" value="1"/>
	G.729 <input type="text" value="2"/>
	G.729.A <input type="text" value="3"/>
	G.729.B <input type="text" value="4"/>
	G.711 A-Law <input type="text" value="5"/>
	G.711 u-Law <input type="text" value="6"/>
H323 Alias:	CPE1
Interdigit Delay: (s)	<input type="text" value="3"/>
Gatekeeper :	Address <input type="text" value="192.168.30.100"/>
	Zone <input type="text"/>
Gatekeeper Keep Alive: (s)	<input type="text" value="3600"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

Note: In the new firmware versions the G.731.1 codec is no more supported.

Call Setting: defines the Voice working mode. It can be set to work with the Gatekeeper or with the internal address book.
Codec Selected: it allows to define the priority list for the codec, when the codec is set in **Automatic**. "1" indicates the main codec.

H323 Alias: name used when registering at the Gatekeeper.

Note: This String must be different for each VoIP devices, otherwise the registration will fail.

Interdigit Delay: wait in sec. from the last digit of the number, before starting the call. It is possible to activate the immediate dialling of the number, inserting the "#" character at the end of the number.

Gatekeeper: Gatekeeper IP address for registration. (**Zone** field = not supported).

Gatekeeper Keep Alive: Time in sec. for the registration renewal at the Gatekeeper.

5.4. ADVANCED VOICE CONFIGURATION

From this menu it is possible to manage some advanced functions of VoiceGATE. The default values are the ones shown in the image.

Advanced voice Configuration

DoB by H.225

Auto Call Enable	<input type="checkbox"/>	# Phone number
Auto Call Number	<input style="width: 80%;" type="text"/>	1 11
Line Number	<input style="width: 80%;" type="text"/>	2 22

Plug call enable	<input type="checkbox"/>
Hook flash (100ms *)	<input style="width: 80%;" type="text" value="8"/>
Check incoming call number enable	<input checked="" type="checkbox"/>
Address Book Secondary GW enable	<input type="checkbox"/>
Dial Tone	Italian
Fast Dial	<input checked="" type="checkbox"/>
Fast Start	<input checked="" type="checkbox"/>
Multiple Gatekeeper registration	<input type="checkbox"/>
Terminal Type	Gateway
H.245 Request	<input checked="" type="checkbox"/>

Submit
Reset

DoB by:

It defines the protocol used to send the DTMF tones out band (DoB).

Auto Call:

It enables VoiceGate to make a call to a particular number as soon as the line is got through.

After enabling the Auto Call option you must set for each line the number to be dialled by the VoiceGATE. If VoiceGATE is set as shown in the picture, it would dial the number 11 when the line 1 is got through and the number 22 for the line 2.

Plug call enable (plug change):

By enabling this function it is possible to hang up the receiver for one minute and get it up again without the communication breaks off (the person you are talking to hold on line for one minute). After one minute the communication interrupts. This function is available with VoiceGATE 2 and 4 AB only, not with ISDN and only on the phone that answers the call, not on the one that originates the call.

Hook flash (100ms*):

It defines the time for the flash detection, from a minimum of 100ms to a maximum of 800ms.

Check incoming call number:

It executes the check of the number to which the incoming call is addressed, accepting only calls to one of the own numbers. By disabling this function VoiceGATE doesn't carry out any control and addresses the call to the line 1.

Address Book Secondary GW:

In AddressBook mode it allows to manage 2 gateways in cascade. If the first gateway indicated in the address book should not be reachable, the call will be forwarded to the second gateway indicated.

Dial Tone:

It allows to custom the dial tone (italian or continuous).

Fast Dial:

It enables the possibility to end the number dialling with the # character.

Fast Start:

It enables/disables the Fast Start call mode.

Multiple Gatekeeper registration:

This parameter allows the Gatekeeper to develop the set mask.

Terminal Type:

It defines the recording mode to the Gatekeeper (Gateway or Terminal)

H.245 Request:

It enables/disables the transmission of the request H.245. This parameter is essential to carry out the transmission and reception of faxes in T.38 mode.

5.5. H.450

It is possible to read and configure the parameters concerning the voice supplementary services, according the H.450 standard.

H.450.2			
Call Transfer <input checked="" type="checkbox"/>			
H.450.3			
Enable	<input checked="" type="checkbox"/>		
CFNR Time out	15		
Telephone Number	Call Forwarding Unconditional (CFU)	Call Forwarding on Busy (CFB)	Call Forwarding No Reply (CFNR)
1	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>	<input type="text"/>
H.450.4			
Far-End Hold <input checked="" type="checkbox"/>			
MCU <input type="text"/>			
H.450.6			
Enable <input checked="" type="checkbox"/>			

You will find here a brief description of the various supplementary services.

For almost all the supplementary services it is necessary to hold on a call (**H.450.4** service enabled). This operation is carried out through the "R" key or "Flash" key with analog phones; in case of ISDN phones there can be different modes: Hold Key, or through a proper configuration menu (example Mirò phone of Telecom Italia).

Note: in the description of the services the R/Flash key will be described with (R).

● H.450.2 Call Transfer

The H.450.2 service allows to manage the call transfer.

During the conversation, by pressing (R) you can put on hold a call and activate a second call. At this point by pressing R4 (R key + 4 key on the phone) the communication will interrupt and the on hold call will be put in contact with the second call.

● H.450.3 Supplementary Services

The H.450.3 services allow the user to divert the incoming calls to another number.

4 types of service are available:

- **CFNR** (*Call Forwarding No Reply*): The calls are diverted only if the user requiring the service is free but does not answer within the time fixed in the CNFR Timeout field (15 sec.)
- **CFU** (*Call Forwarding Unconditional*): The calls addressed to the user requiring the service are always diverted.
- **CFB** (*Call Forwarding Busy*): The calls are diverted only if the user is busy.
Note: the user is busy only if he called another number. Then, if the receiver is up, the number is free, as no info on the status change has been sent to the Gatekeeper yet.
- **CD** (*Call Deflection*): The calls are diverted only if the user requiring the service is free and he decides to redirect the call (ISDN only).

In the fields telephone number 1 and 2 it must be inserted the number to forward the call.

- **H.450.4 Call Hold**

The H.450.4 service allows to put on hold a call and to call another number. Once the two calls have been activated, you can:

Press R + 1 -> To close the active call and recover the on hold call.

Press R + 2 -> To switch from a conversation to another, keeping one on hold.

Press R + 3 -> To activate a three users conference.

Note: For the three users conference it is necessary to use the GateKeeper Server and the MCU Server (Multipoint Conference Unit) not supplied with the product.

- **H.450.6 Supplementary Services**

The H450.6 service allows the management of the call waiting option.

During the conversation you hear the beep for a call waiting, you can:

- Press R+0 -> To reject an incoming call.

- Press R+1 -> To close the active conversation and answer the incoming call.

Press R+2-> To put on hold the active call and answer the incoming call.

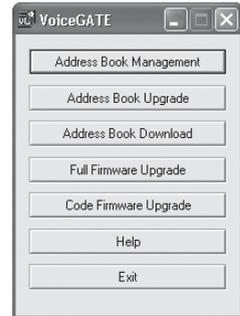
6. VOICEGATE.EXE



Use the **VoiceGATE** utility to :

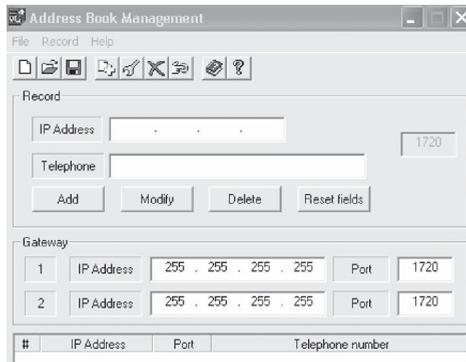
- Create the "AddressBook"
- Load the AddressBook in the VoiceGATEs
- Upgrade the VoiceGATE firmware

In the following paragraphs you will find some information on the use of the program; for further details refer to the Help on-line.



6.1. ADDRESS BOOK MANAGEMENT

The Address Book Management allows to create the address book in a simple way.



The VoiceGATE Address Book can manage up to 250 different telephone numbers.

The screenshot shows the 'Address Book Management' window with the following configuration:

Record

IP Address	80 . 204 . 9 . 194	Port	1720
Telephone	102		

Buttons: Add, Modify, Delete, Reset fields

Gateway

1	IP Address	255 . 255 . 255 . 255	Port	1720
2	IP Address	255 . 255 . 255 . 255	Port	1720

Table:

#	IP Address	Port	Telephone number
1	80.204.9.194	1720	101
2	80.204.9.194	1720	102

To insert new IP addresses/telephone numbers:

- Insert the WAN IP address (Public Network ...) of the VoiceGate (for example 80.204.9.194)
- Insert the first telephone number you want to associate to VoiceGate for example 101
- Click on **Add** to confirm

To insert the second telephone number:

- Insert the WAN IP address of the VoiceGate (for example 80.204.9.194)
- Insert the second telephone number you want to associate to VoiceGate (for example 102)
- Click on **Add** to confirm

After you have completed the insertion, save the address book file (**addrbook.cpe**).

Gateway IP Address

The IP Address field concerning the Gateway represents the IP Address of an eventual PSTN/ISDN Gateway. The Gateway allows the communication between the VoIP network and the traditional telephone lines (PSTN, ISDN and GSM). If the VoiceGATE doesn't find the number selected in the address book, it sends it to the Gateway, that will call the selected number.

Special Functions

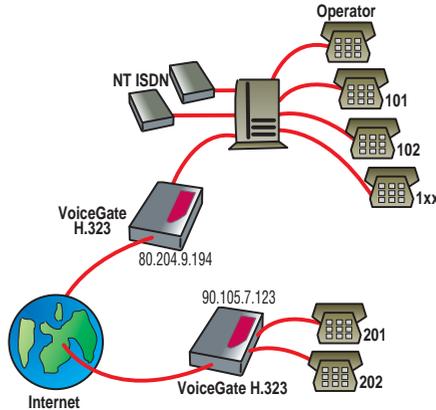


Figura 1

If VoiceGATE is connected to an ISDN switchboard, as shown in picture 1, it could be necessary to associate multiple telephone numbers (from 100 to 199) to an IP Address (example: 80.204.9.194). This is possible inserting the number with the indication 1**.

#	IP Address	Port	Telephone number
1	90.105.7.123	1720	201
2	90.105.7.123	1720	202
3	80.204.9.194	1720	1**

With this configuration, all the calls coming from 201 and 202 telephones and addressed to the numbers included among 100 and 199 will be directed to the IP 80.204.9.194. The call will arrive at the ISDN switchboard, that if correctly programmed, will directly switch the call to the extension.

Attention: when you fill in the address book, the telephone numbers composed by “*” character must be inserted at the end.

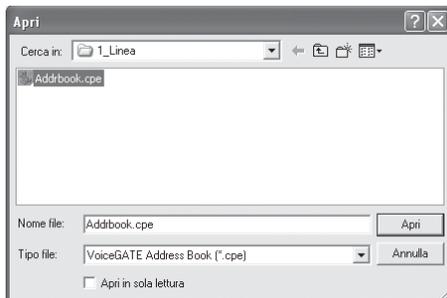
#	IP Address	Port	Telephone number
1	90.105.7.123	1720	201
2	90.105.7.123	1720	202
3	80.204.9.194	1720	100
4	80.204.9.194	1720	1**

NOTE: The address book must contain the correspondence among the IP addresses and the telephone numbers of all the VoiceGATE of your VoIP network.

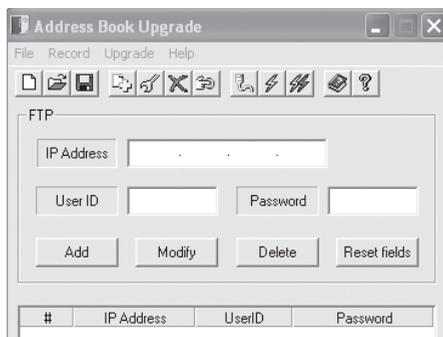
6.2. ADDRESS BOOK UPGRADE

Through the **Address Book Upgrade** you can send the address book with the **Address Book Management**.

After selecting **Address Book Upgrade** choose the address book file to be sent.



Insert the IP address, UserID and Password of the VoiceGATE to which you must send the address book, then confirm with **ADD**. If you want to send the address book to other VoiceGATEs it is sufficient to repeat the procedure, adding more IP addresses in the list.



With these buttons you can:



verify the presence of the VoiceGATE devices in the list.



upgrade the selected VoiceGATE devices.



upgrade all the VoiceGATEs in the list.

It is possible to save the list of the VoiceGATEs (File/Save). In this way you can recall the saved list for future upgrades.

Attention: Turn off and on the VoiceGATEs to activate the new settings.

ITALY
21010 Cardano al Campo VA
via A. Volta 39

